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# X-ray Absorption Spectroscopy on Cu/ZnO Catalysts Selected by High-Throughput Experimentation Techniques

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# Abstract

CuO/ZnO catalysts, prepared in an automated synthesis by coprecipitation, were tested for methanol synthesis by high throughput screening using a 49-channel parallel flow reactor. The activity strongly depended on the preparation conditions and the calcination temperature. Interesting samples were selected for deeper characterization by EXAFS including *in situ* spectroscopic studies during temperature programmed reduction. Both ageing time and calcination temperature had a strong influence on the reduction behaviour of CuO/ZnO samples and thus resulted in an altered catalytic activity. In all cases, only a small fraction of Cu(I) species was formed during reduction.